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AMENDMENTS TO THE CLAIMS

Listing of claims:

1. (Currently amended) A system ~~for~~ that measures an etch of a mask feature, monitoring the etching of apertures in an alternating phase shift mask, comprising:
one or more fabricating components ~~operative to fabricate~~ that fabricate one or more mask features on an alternating aperture phase shift mask;
a ~~fabricating component driving component system operably connected that~~ controls ~~to the one or more fabricating components, the fabricating component driving system operable to drive the one or more fabricating components;~~
an emitting component that directs light ~~a system for directing light~~ on to at least one ~~of the one or more features~~ of the features on the alternating aperture phase shift mask; and
~~a measuring system~~ an analysis component that measures ~~for measuring~~ one or more feature parameters based on a light reflected and/or refracted from the one or more features, the measured feature parameter utilized by the driving system to control the fabrication component during fabrication process and post-fabrication process in an alternating aperture phase shift mask.
2. (Original) The system of claim 1, comprising a processor operatively coupled to the measuring system and the fabricating component driving system.
3. (Cancelled)
4. (Currently amended) The system of claim 1, ~~3~~ where the fabricating components are etching components.

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5. (Currently amended) The system of claim 1, ~~4~~ where the features comprise at least one of an aperture and a grating.

6. (Currently amended) The system of claim 1, ~~3~~ where the analysis component measuring system comprises a scatterometry system for processing the light reflected from the one or more features.

7. (Currently amended) The system of claim 1, ~~6~~ where the fabricating components are etching components.

8. (Currently amended) The system of claim 1, ~~7~~ where the features comprise at least one of an aperture and a grating.

9. (Currently amended) The system of claim 1, ~~6~~ where the processor maps the mask into a plurality of grid blocks and makes a determination of fabrication conditions at the one or more grid blocks.

10. (Currently amended) The system of claim 1, ~~9~~ where the fabrication conditions comprise at least one of the depth, width and profile of the features.

11. (Currently amended) The system of claim 1, ~~10~~ where the processor determines the existence of an unacceptable fabrication condition for the one or more features based upon a determined feature signature differing from an acceptable feature signature.

12. (Currently amended) The system of claim 2, ~~10~~ where the processor controls the one or more fabricating components to regulate fabricating the one or more features on the mask.

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13. (Currently amended) The system of claim 1, ~~12~~ where the features comprise at least one of an aperture and a grating.

14. (Currently amended) The system of claim 1, ~~13~~ where the fabricating components are etching components.

15. (Original) A system for monitoring the profile of an aperture on an alternating aperture phase shift mask, the system comprising:
a system for directing light onto an alternating aperture phase shift mask; and
a measuring system for measuring one or more aperture parameters based on a light reflected from the aperture.

16. (Currently amended) The system of claim 15, ~~where~~ the aperture parameters comprise at least one of aperture depth, aperture width and aperture wall slope.

17. (Currently amended) The system of claim 15, ~~16~~ comprising a processor adapted to receive aperture data from the measuring system and to facilitate determining whether the alternating aperture phase shift mask has been fabricated within one or more pre-determined tolerances.

18. (Currently amended) The system of claim 17, ~~where~~ the pre-determined tolerances comprise at least one of aperture depth, aperture width and aperture wall slope.

19. (Currently amended) The system of claim 15, ~~18~~ where the measuring system comprises a scatterometry system for processing the light reflected from an aperture to determine an aperture signature.

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20. (Currently amended) The system of claim 15, ~~19~~ where the processor determines whether the mask has been fabricated within one or more pre-determined tolerances based upon a determined aperture signature differing from an acceptable aperture signature.

21. (Withdrawn) A method for monitoring and controlling aperture etching in an alternating aperture phase shift mask, comprising:

- etching one or more apertures on the alternating aperture phase shift mask;
- directing light onto at least one of the one or more apertures;
- collecting light reflected from the at least one aperture;
- employing scatterometry to analyze the reflected light to determine at least one of the depth, shape, location, profile and width of the at least one aperture; and
- selectively controlling the etching of the one or more apertures in the mask.

22. (Withdrawn) The method of claim 21 comprising:

- etching one or more gratings on the alternating aperture phase shift mask;
- directing light onto at least one of the one or more gratings;
- collecting light reflected from the at least one grating; and
- employing scatterometry to analyze the reflected light to determine at least one of the depth, shape, location, profile and width of the at least one grating.

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23. (Withdrawn) A method for determining whether an alternating aperture phase shift mask has been fabricated with desired aperture etching parameters, comprising:

- etching one or more apertures on the alternating aperture phase shift mask;
- directing light onto at least one of the one or more apertures;
- collecting light reflected from the at least one aperture;
- employing scatterometry to analyze the reflected light to determine at least one of the depth, shape, location, profile and width of the at least one aperture; and
- determining the acceptability of the alternating aperture phase shift mask based on at least one of the depth, shape, location, profile and width of the at least one aperture.

24. (Withdrawn) The method of claim 23 comprising:

- etching one or more gratings on the alternating aperture phase shift mask;
- directing light onto at least one of the one or more gratings;
- collecting light reflected from the at least one grating; and
- employing scatterometry to analyze the reflected light to determine at least one of the depth, shape, location, profile and width of the at least one grating.

25. (Currently amended) A system for controlling a process for etching openings in an alternating aperture phase shift mask, comprising:

- means for sensing at least one of the shape, location, depth, width and opening wall slopes of one or more apertures on the alternating aperture phase shift mask;

- means for etching one or more apertures on the alternating aperture phase shift mask; and

- means for selectively controlling the etching of the one or more apertures based on analysis of data collected by the means for sensing the shape, location, depth, width and opening wall slopes of the one or more apertures.